

Anforderungen an den Generator

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Inhalt

- 1 Was macht der Generator**
- 2 Anforderungen an den Generator
- 3 Codeanalyse
- 4 Xtend Funktionalität



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Was macht der Generator

- erzeugt Verzeichnisstruktur
- Dateien mit dem Code anhand eines Modells
- Code besteht aus statischen, dynamischen und wiederkehrenden Codefragmenten
- erzeugt Tests

Inhalt

- 1 Was macht der Generator
- 2 Anforderungen an den Generator**
 - Funktionale Anforderungen
 - Nicht-Funktionale Anforderungen
- 3 Codeanalyse
- 4 Xtend Funktionalität



Funktionale Anforderungen an den Generator

- Generatordesign
 - Unterstützte Plattformen
 - Anwendungsarchitektur
 - Anwendungsdesign
 - Individueller Code



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Funktionale Anforderungen an den Generator

- Benötigte anwendungsspezifische Informationen
 - Anwendungsfälle
 - Rollen
 - Datenstrukturen
 - Services
 - Darstellung



Nicht-Funktionale Anforderungen an den Generator

- leichtes Einfügen von individuellem Code
- gut lesbarer Code
- vermeiden von sog. "code smells"



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Codeanalyse

- Ermitteln von...
 - Verzeichnisstrukturen
 - statischen Inhalten
 - schematisch wiederkehrenden Inhalten
 - dynamischen Inhalten



Verzeichnisstruktur einer Komponente

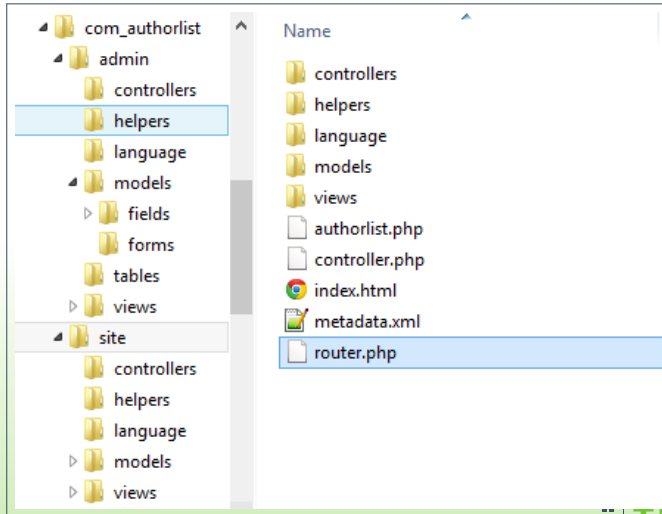


Abbildung : Ordnerstruktur einer Joomla Komponente

XML Datei - Beschreibung

```

<?xml version="1.0" encoding="utf-8"?>
<extension type="component" version="1.6.0" method="upgrade">
  <name>COM_AUTHORLIST</name>
  <author>Autogenerated Author</author>
  <creationDate>July 2011</creationDate>
  <copyright>All rights reserved by autogenerated Author</copyright>
  <license>GPL 2.0</license>
  <authorEmail>mail@example.com</authorEmail>
  <authorUrl>www.example.com</authorUri>
  <version>1.2.0</version>
  <description>COM_AUTHORLIST_XML_DESCRIPTION</description>
  <install>
    <sql>
      <file driver="mysql" charset="utf8">install.sql</file>
    </sql>
  </install>
  <uninstall>
    <sql>
      <file driver="mysql" charset="utf8">uninstall.sql</file>
    </sql>
  </uninstall>
  <files folder="site">
    <filename>controller.php</filename>
    <filename>authorlist.php</filename>
    <filename>index.html</filename>
    <filename>metadata.xml</filename>
    <filename>router.php</filename>
    <folder>controllers</folder>
    <folder>helpers</folder>
    <folder>models</folder>
    <folder>views</folder>
    <folder><img alt="red square icon" data-bbox="360 830 370 845"/></folder>
  </files>

```

Abbildung : XML Datei Beschreibung



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XML Datei - Beschreibung

```

<administration>
  <menu img="components/com_authorlist/images/icon-16-authorlist.png">
    COM_AUTHORLIST
  </menu>
  <files folder="admin">
    <filename>access.xml</filename>
    <filename>config.xml</filename>
    <filename>controller.php</filename>
    <filename>authorlist.php</filename>
    <filename>index.html</filename>
    <filename>install.sql</filename>
    <filename>uninstall.sql</filename>
    <folder>controllers</folder>
    <folder>helpers</folder>
    <folder>images</folder>
    <folder>models</folder>
    <folder>tables</folder>
    <folder>views</folder>
    <folder> </folder>
  </files>
  <languages folder="admin/language">
    <language tag="en-GB">en-GB.com_authorlist.ini</language>
    <language tag="en-GB">en-GB.com_authorlist.sys.ini</language>
  </languages>
  <images folder="admin">
    <folder>images</folder>
  </images>
</administration>
</extension>

```

Abbildung : XML Datei Beschreibung



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Verzeichnisstruktur eines Plug-Ins

plg_authorlist	Name	Änd
language	language	05.0!
en-GB	authorlist.php	05.0!
com_authorlist.zip	authorlist.xml	05.0!
plg_authorlist.zip	index.html	05.0!
authorlist 1.2.0 erst		

Abbildung : Ordnerstruktur eines Joomla Plug-Ins

PlugIn - Template Dateien

```

<?xml version="1.0" encoding="utf-8"?>
<extension version="1.6" type="plugin" group="content">
  <name>PLG_CONTENT_AUTHORLIST</name>
  <author>Autogenerated Author</author>
  <creationDate>Jan 2018</creationDate>
  <copyright>All rights reserved by autogenerated Author</copyright>
  <license>GPL 2.0</license>
  <authorEmail>mail@example.com</authorEmail>
  <authorUrl>www.example.com</authorUrl>
  <version>1.0.0</version>
  <description>PLG_CONTENT_AUTHORLIST_XML_DESCRIPTION</description>
  <files>
    <filename plugin="authorlist">authorlist.php</filename>
    <filename>index.html</filename>
    <folder>language</folder>
  </files>
  <languages folder="language">
    <language tag="en-GB">en-GB/en-GB_plg_content_authorlist.en</language>
    <language tag="en-GB">en-GB/en-GB_plg_content_authorlist.sys.en</language>
  </languages>
  <config>
    <fields name="params">
      <fieldset name="basic">
        <field name="display" type="list" default="1">
          <label>Author Link Options</label>
          <description>When to display Author Link</description>
          <option value="1">More Contact Link</option>
          <option value="2">Only if no Contact Link</option>
          <option value="3">Reverse Contact Link</option>
        </field>
        <field name="alias" type="radio" default="1">
          <label>Link Alias</label>
          <description>Display link even when alias is set</description>
          <option value="1">NO</option>
          <option value="2">YES</option>
        </field>
      </fieldset>
    </fields>
  </config>
</extension>

```

Abbildung : Plug-In Templatedateien

Verzeichnisstruktur eine Moduls

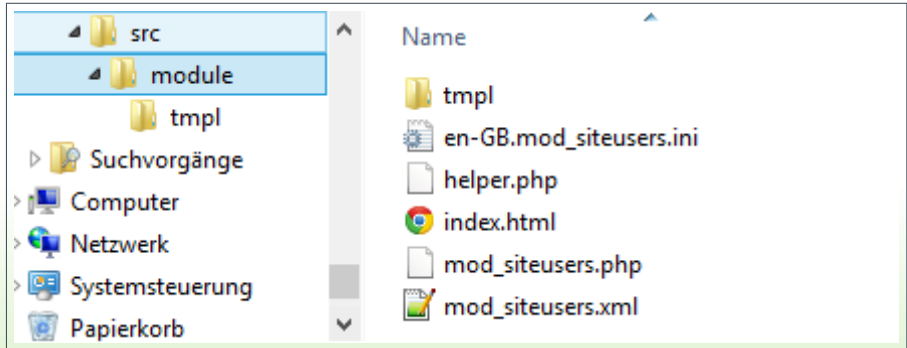


Abbildung : Ordnerstruktur eines Joomla Module

PHP Datei

```

<?php
defined("_JEXEC") or die;
jimport('joomla.plugin.plugin');

class JgContentAuthorList extends JPlugin {
    public function __construct(& $subject, $config) {
        parent::__construct($subject, $config);
        $this->loadLanguage();
    }

    public function onContentBeforeDisplay($context, &$row, &$params, $page=0) {
        if ($params->get('show_authors')) {
            $com_path = JPATH_SITE.'/components/com_authors';
            require_once $com_path.'/helpers/route.php';

            $aParams = JComponentHelper::getParams('com_authors', true);
            $authors = array();

            $db = JFactory::getDBO();
            $query = $db->getQuery(true);
            $query->select('a.name AS name, u.username AS username');
            $query->from('#__users AS u');

            $query->select('a.userid AS userid, CASE WHEN CHAR_LENGTH(a.alias)
            THEN CONCAT_WS(':', a.userid, a.alias) ELSE a.userid END as slug');
            $query->join('LEFT', '#__authors AS a ON a.userid = u.id');

            $db->setQuery($query);
            $authors = $db->loadObjectList();

            foreach ($authors as $list) :
                $authors[$list->userid][$slug] = $list->slug;
                $authors[$list->userid][$name] = $list->name;
                $authors[$list->userid][$username] = $list->username;
            endforeach;

            ...
        }
    }
}

```



XML Datei - Beschreibung

```

mod_siteusers/mod_siteusers.xml
<?xml version="1.0" encoding="utf-8"?>
<extension type="module" version="1.6.0" client="site" method="install">
  <name>Site Users</name>
  <author>Autogenerated Author</author>
  <creationDate>2012</creationDate>
  <copyright>All rights reserved by autogenerated Author</copyright>
  <license>GPL 2.0</license>
  <authorEmail>mail@example.com</authorEmail>
  <authorUrl>www.example.com</authorUrl>
  <version>1.0.0</version>
  <description>Provides a listing of registered users</description>
  <!-- Listing of all files that should be installed for the module to function -->
  <files>
    <!-- The "module" attribute signifies that this is the main controller file -->
    <filename module="mod_siteusers">mod_siteusers.php</filename>
    <filename>index.html</filename>
    <filename>helper.php</filename>
    <filename>tmpl/index.html</filename>
    <filename>tmpl/default.php</filename>
    <filename>tmpl/ordered_list.php</filename>
    <filename><?</filename>
  </files>

  <languages>
    <!-- Any language files included with the module -->
    <language tag="en-GB">en-GB_mod_siteusers.ini</language>
  </languages>

```

Abbildung : XML Datei Beschreibung

XML Datei - Optionen

```

<!-- Optional parameters -->
<config>
  <fields name="params">
    <fieldset name="basic">
      <field
        name="moduleclass_sfx"
        type="text"
        default="↑"
        label="LABEL_CLASS_SUFFIX"
        description="DESC_MOD_SUFFIX">
      </field>
      <field
        name="usercount"
        type="text"
        default="5"
        label="LABEL_USER_COUNT"
        description="DESC_USER_COUNT">
      </field>
      <field
        name="layout"
        type="list"
        default="default"
        label="LABEL_USER_LAYOUT"
        description="DESC_USER_LAYOUT">
        <option value="default">Unordered List</option>
        <option value="ordered_list">Ordered List</option>
      </field>
    </fieldset>
  </fields>
</config>

```

Abbildung : Vorhandene Optionen



Modul - Dateien

```

mod_siteusers/index.html
<html><body bgcolor="#FFFFFF"></body></html>

mod_siteusers/tmpl/index.html
<html><body bgcolor="#FFFFFF"></body></html>

mod_siteusers/mod_siteusers.php
<?php
//don't allow other scripts to grab and execute our file
defined('_JEXEC') or die('Direct Access to this location is not allowed.');
```

//This is the parameter we get from our xml file above

```

$userCount = $params->get('usercount');
```

// Include the syndicate functions only once

```

require_once dirname(__FILE__).'/helper.php';
```

//Returns the path of the layout file

```

require JModuleHelper::getLayoutPath('mod_siteusers', $params->get('layout', 'default'));
?>
```

mod_siteusers/helper.php

```

<?php
//No access
defined('_JEXEC') or die;
```

//Add database instance

```

$db = JFactory::getDBO();
```

//Pass in query - Limit by the usercount param

```

$query = "SELECT name FROM #__users LIMIT ($userCount)";
```

//Run it

```

$db->setQuery($query);
```

//Load it as an object into the variable "\$rows"

```

$rows = $db->loadObjectList();
?>
```

Abbildung : Modul Dateiauflistung



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Modul - Template Dateien

mod_siteusers/tmpl/default.php

```
<ul>
  <?php foreach ($rows as $row){ ?>
    <li>
      <?php echo JText::sprintf('USER_LABEL', $row->name); ?>
    </li>
  <?php } ?>
</ul>
```

mod_siteusers/tmpl/ordered_list.php

```
<ol>
  <?php foreach ($rows as $row){ ?>
    <li>
      <?php echo JText::sprintf('USER_LABEL', $row->name); ?>
    </li>
  <?php } ?>
</ol>
```

Abbildung : Modul Templatedateien



Modul - Sprachdatei

```
mod_siteusers/en-GB.mod_siteusers.ini  
LABEL_CLASS_SUFFIX = "Module Class Suffix"  
DESC_MOD_SUFFIX = "Add a module css class suffix"  
LABEL_USER_COUNT = "User Count"  
DESC_USER_COUNT = "The number of users to display"  
LABEL_USER_LAYOUT = "User Layout"  
DESC_USER_LAYOUT = "The layout to show the users"  
DESC_MODULE = "Website Users"  
USER_LABEL = "%s"
```

Abbildung : Modul Sprachdatei

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 - Aufbau



Aufbau einer Xtend-Datei

```
1 package de.thm.mdd.generator
2
3 import org.eclipse.xtext.generator.IGenerator
4 import org.eclipse.xtext.generator.IFileSystemAccess
5 import org.eclipse.xtext.naming.IQualifiedAuthProvider
6 import com.google.inject.Inject
7 import java.lang.CharSequence
8
9
10 class MddGenerator implements IGenerator {
11
12 @Inject extension IQualifiedAuthProvider
13 override void doGenerate(Resource resource, IFileSystemAccess fsa)
14     {
15 for(mod: resource.allContents.toIterable.filter(typeof(Modul))) {
16 fsa.generateFile(mod.name + "/" + mod.name + ".xml", mod.xml)
17 fsa.generateFile(mod.name + "/" + mod.name + ".php", mod.php)
18 }
```



Aufbau einer Xtend-Datei

```
1 for (plug : resource.allContents.toIterable.filter(typeof(Plugin)))
  {
2 fsa.generateFile(plug.name + "/" + plug.name + ".xml", plug.xml)
3 fsa.generateFile(plug.name + "/" + plug.name + ".php", plug.php)
4 }
5
6 for(com: resource.allContents.toIterable.filter(typeof(Component)))
  {
7 fsa.generateFile(com.name + "/" + com.name + ".xml", com.xml)
8 fsa.generateFile(com.name + "/admin/config.xml", com.conXml)
9 fsa.generateFile(com.name + "/site/metadata.xml", com.MetaXml)
10
11 }
12 }
13 }
```



Aufbau einer Xtend-Datei

```
1 def CharSequence genSafeurlparams (ParamList parlst)'''
2 $safeurlparams = array(«FOR par:parlst.param SEPARATOR "," »'«par.
   name»'=>'«par.cmd»'«ENDFOR»);
3 '''

1 $safeurlparams = array('id'=>'INT','cid'=>'ARRAY','year'=>'INT','
   month'=>'INT','limit'=>'INT','limitstart'=>'INT',
2 'showall'=>'INT','return'=>'BASE64','filter'=>'STRING','
   filter_order'=>'CMD','filter_order_Dir'=>'CMD','filter-search'
   =>'STRING','print'=>'BOOLEAN','lang'=>'CMD');
```



Protectet Regions in einer Xtend-Datei

```
1 «PROTECT CSTART "/"* CEND "*" / ID ElementsUniqueID»  
2     Vorgabe  
3 «ENDPROTECT»
```



IF in einer Xtend-Datei

```
1 «IF expression»  
2     a sequence of statements  
3 [ «ELSEIF expression» ]  
4     a sequence of statements ]  
5 [ «ELSE»  
6     a sequence of statements ]  
7 «ENDIF»
```

